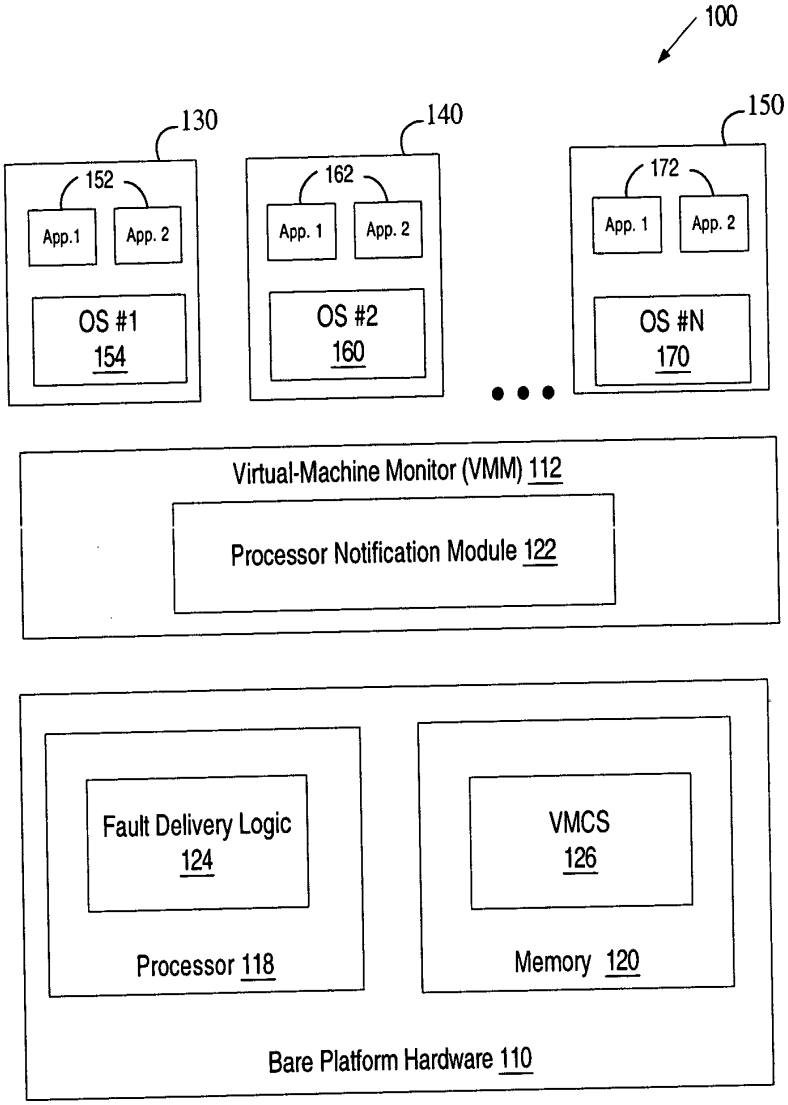
100
130
140
150
152
162
172
App.1
App. 2
App. 1
App. 2
App. 1
App. 2
OS #1
154
OS #2
160
OS #N
170
Virtual-Machine Monitor (VMM) 112
Processor Notification Module 122
Fault Delivery Logic
124
VMCS
126
Processor 118
Memory 120
Bare Platform Hardware 110

FIG. 1

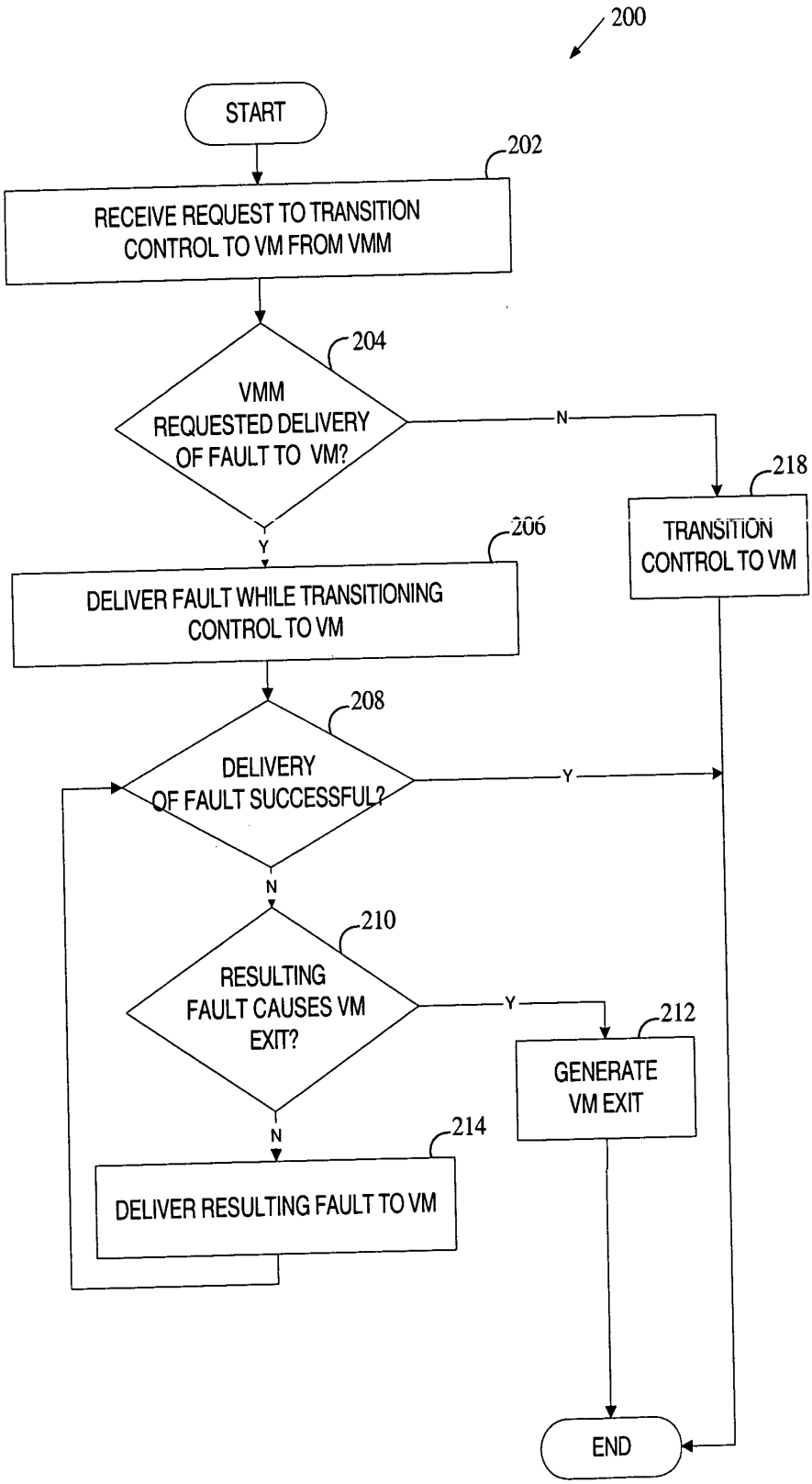
200
START
202
RECEIVE REQUEST TO TRANSITION CONTROL TO VM FROM VMM
204
VMM REQUESTED DELIVERY OF FAULT TO VM?
N
Y
218
TRANSITION CONTROL TO VM
206
DELIVER FAULT WHILE TRANSITIONING CONTROL TO VM
208
DELIVERY OF FAULT SUCCESSFUL?
Y
N
210
RESULTING FAULT CAUSES VM EXIT?
Y
212
GENERATE VM EXIT
N
214
DELIVER RESULTING FAULT TO VM
END

FIG. 2

Bit Position	Contents
7:0	Vector of interrupt or exception
9:8	Interruption type (0 = external interrupt; 1 = software interrupt; 2 = NMI; 3 = exception)
10	Reserved and unused
11	Delivery error code (0 = do not deliver; 1 = deliver)
20:12	Reserved and unused
31	Valid (1 = valid; 0 = not valid)

FIG. 3

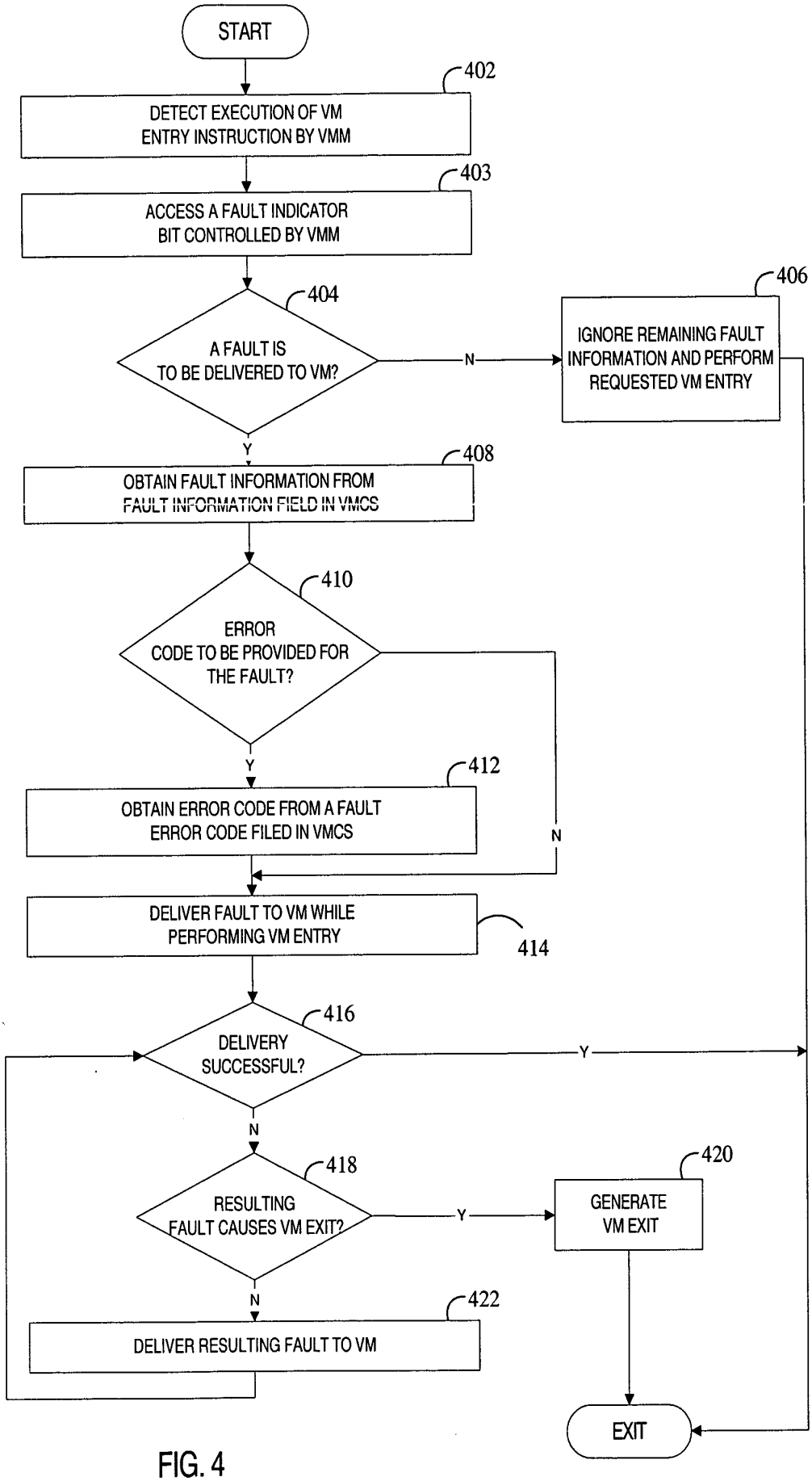
START
402
DETECT EXECUTION OF VM ENTRY INSTRUCTION BY VMM
403
ACCESS A FAULT INDICATOR BIT CONTROLLED BY VMM
404
A FAULT IS TO BE DELIVERED TO VM?
N
406
IGNORE REMAINING FAULT INFORMATION AND PERFORM REQUESTED VM ENTRY
Y
408
OBTAIN FAULT INFORMATION FROM FAULT INFORMATION FIELD IN VMCS
410
ERROR CODE TO BE PROVIDED FOR THE FAULT?
Y
412
OBTAIN ERROR CODE FROM A FAULT ERROR CODE FILED IN VMCS
N
DELIVER FAULT TO VM WHILE PERFORMING VM ENTRY
414
416
DELIVERY SUCCESSFUL?
Y
N
418
RESULTING FAULT CAUSES VM EXIT?
Y
420
GENERATE VM EXIT
N
422
DELIVER RESULTING FAULT TO VM
EXIT

FIG. 4